DOCUMENT RESUME

ED 097 342 TM 003 918

AUTHOR Iwanicki, Edward F.
TITLE Activity Analysis: An Approach to Improving the Evaluation Design of Ongoing Educational Programs.
PUB DATE [Apr 74]
NOTE 16p.; Paper presented at the Annual Meeting of the National Council on Measurement in Education (Chicago, Illinois, April, 1974)

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS Communication Problems; Consultants; Educational Programs; *Evaluation Methods; *Formative Evaluation; *Objectives; *Program Administration; *Program Evaluation; Summative Evaluation

ABSTRACT

Problems are frequently encountered when attempting to improve the evaluation design of an ongoing educational program which has not made adequate provisions for evaluation. Usually the objectives of such a program are too global to guide the evaluator in the development of a more functional evaluation design. This paper presents a discussion of the activity analysis approach which is helpful in such a situation to obtain information needed in the development of an improved evaluation design. Once this information has been obtained it can be used by an evaluator in the development of a more comprehension evaluation design for the ongoing program. (Author)

ED 097342

ACTIVITY ANALYSIS:

An Approach To Improving The Evaluation Design Of Ongoing Educational Programs

Edward F. Iwanicki
Center for Field Research and School Services
BOSTON COLLEGE

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Paper presented at the Annual Meeting of the National Council on Measurement in Education, Chicago, Illinois, April, 1974

TM 003 918

INTRODUCTION

Although most state and federal agencies require that an evaluation design accompany a proposal for the funding of a new educational program, some local school districts, community agencies, and regional centers, are receiving funds to support programs which do not have adequate provisions for evaluation. As administrators of such programs become aware that the amount of future funding is dependent on the quality of the evaluation of their project, they seek consultant assistance for the development of more substantive evaluation designs.

A recent event which precipitated such activity was the transfer of some ongoing educational programs from the United States Office of Education and the Office of Educational Opportunity to the National Institute of Education. Some of these ongoing projects were funded on the basis of the needs they would service and the unique means in which they would meet these needs. For some projects, the evaluation design consisted of the minimal assessment of summative outcomes. Since NIE has required a more comprehensive evaluation of their funded programs, many project administrators were faced with incorporating formative evaluation activities into their designs as well as improving the quality of their summative evaluation activities. While working with program administrators confronted with the task of improving the evaluation component of their

project, it has become evident that the major problem in this effort is communication. More specifically, the quality of the new evaluation design as well as the time needed to develop such a design is dependent upon the ability of the program staff to communicate the essence of the project to the evaluation consultant. The activity analysis approach has been developed to maximize communication between the program staff and evaluation consultant and thus, maximize their efforts to develop a more functional design for the evaluation of the project.

BACKGROUND

The major problem encountered when attempting to improve the evaluation design of an ongoing program is usually the failure of the program objectives to communicate to the evaluator the specific activities being undertaken or the specific outcomes expected. Often the evaluator is presented with program objectives which are similar to the one which follows:

> Through the implementation of a Comprehensive Diagnostic Center, Project Help will expedite the referral and diagnosis of students with learning disabilities.

Although this objective conveys the general activity of establishing a diagnostic center and the general outcomes of expediting the referral and diagnosis of students with learning disabilities, this information is not sufficient for the development of a functional evaluation design, that is, an evaluation

design which would provide the program administrator with both formative and summative feedback. In order to obtain the more specific information desired, the evaluator has tended traditionally to review the documentation on the program and meet with program personnel until enough specific information has been collected to formulate an appropriate evaluation design. Although this practice is widely accepted, some problems can be encountered when applying this approach in a program setting.

First, the process of meeting with program staff to clarify activities and outcomes can be quite costly, especially for large projects. In some large program settings, it could take up to two weeks of on-site visitation for a consultant to obtain the necessary information to develop a functional evaluation design. Often programs in need of this assistance, do not have the necessary funds at their disposal to support such preliminary evaluation activities.

Secondly, it is not always easy to obtain the assistance of a competent evaluation specialist to improve the evaluation of an ongoing program. Some evaluation specialists do not look forward to meeting with program personnel to extract from them the specifics of their project activities and intents. Their basic reason being the amount of time "wasted" in the process of general introductions to program personnel, coffee breaks, telephone interruptions, and discussions of the generalities of the program before one gets down to the real specifics of the program. Many qualified evaluation specialists find it

discouraging to work in such practical settings since they feel it is an inefficient use of their time and expertise.

Finally, in cases where the program objectives as well as other documentation are vague, meetings with program personnel for further clarification of program activities and intents can focus on those aspects of the project which the staff would like to see evaluated rather than those aspects which should be evaluated. A program evaluation design based on such input would not be comprehensive, but instead, would focus on those areas of crucial interest to the program staff. Although some evaluation specialists might argue that this practice is acceptable, most funding agencies would disagree. The goal of the evaluator is to take a comprehensive look at the impact of the total program, not just those areas of primary concern to the program staff.

Although these are not all of the problems which can be encountered when the evaluation specialist and program staff join forces to improve the evaluation design of an ongoing program, they are some of the more common difficulties experienced. These problems have not been cited to discourage such joint efforts, but rather to illustrate the need to develop a less costly and more efficient process whereby the evaluation specialist and program staff can work together toward their common goal of developing a more comprehensive design for the evaluation of an ongoing educational program. Activity analysis was developed in response to this need.

THE ACTIVITY ANALYSIS RATIONALE

Activity analysis is an approach to the development of an improved evaluation design through the systematic delineation and analysis of the activities inherent in each of the global objectives of an ongoing program. Although activity analysis can be introduced into an ongoing program by an evaluation specialist, the primary responsibility for the review of activities related to program objectives rests with the program personnel. Initially, activity analysis may appear to be a new term for the restatement of global objectives in specific operational terms. As the rationale for activity analysis is presented, it will become evident that the restatement of global objectives in operational terms is only one aspect of activity analysis.

The initial step in applying the activity analysis rationale to an ongoing program is to delineate the activities inherent in each of the global objectives of the program. When listing these activities, they should be described in operational terms. Next, it is important to evaluate the activities for each objective on the basis of their clarity, necessity, and sufficiency relative to the attainment of the objective. In other words, for each objective it is necessary to review the activities listed to be sure they are described clearly in operational terms which would convey the essence of the activity to a person not closely involved with the operation of the program. Also, it is important to assess

the activities related to each objective as a whole to determine whether it is necessary to pursue each activity in order to attain the objective. Peripheral activities which are not essential to the attainment of the objective may be eliminated. Finally, the activities directed toward each program objective should be examined in total to determine whether the completion of these activities would insure the attainment of the program objective. If the activities are not sufficient for the achievement of a program objective, it is necessary to delineate those additional activities which must be pursued in order to reach the objective.

Once the activities related to each program objective have been adequately delineated and screened according to the criteria of clarity, necessity, and sufficiency, the structure and sequence of these activities should be specified. The structure consists of a detailed explanation of each activity, whereas the sequence is the temporal arrangement of these activities. Once the structure and sequence of the activities related to each objective are specified, the program administrator has at his disposal a detailed blueprint or map of the program objectives and concommitent activities which the project proposes to complete. The general format of this map is illustrated in Figure 1.

Before proceeding with the activity analysis rationale the program administrator should conduct an objective by objective review of this map to determine whether the resources

FIGURE 1

General Format of the Map of Program Objectives and Activities Developed Through the Application of Activity Analysis

PROGRAM OBJECTIVE 1

Activity 11
- Detailed description of activity 11

Activity 12
- Detailed description of activity 12

Activity 13
- Detailed description of activity 13

.
.
.

Activity 1n
- Detailed description of activity 1n

PROGRAM OBJECTIVE 2

Activity 21
- Detailed description of activity 21

Activity 22
- Detailed description of activity 22

Activity 23
- Detailed description of activity 23

.
.
.

Activity 2n
- Detailed description of activity 2n

.
.
.

PROGRAM OBJECTIVE N

Activity N1
- Detailed description of activity N1

Activity N2
- Detailed description of activity N2

Activity N3
- Detailed description of activity N3

.
.
.

Activity Nn
- Detailed description of activity Nn

of the program are sufficient to complete an effort of this magnitude. If the necessary program resources are not available, decisions must be made to reduce the scope of some of the activities, eliminate some activities entirely, and possibly, to delete some entire objectives from the program plan. The result of such a review is a revised map of program objectives and concommitent activites which can be completed realistically, given the available program resources.

The final step in applying the activity analysis rationale consists of developing an activity analysis table for each program objective on the basis of the information presented in the program map. A sample activity analysis table is presented in Table 1. An activity analysis table is similar to the program map in that it contains a statement of the program objective as well as a delineation of the program activities essential to the attainment of that objective. In addition, the activity analysis table includes such information as: the agents responsible for the activity, starting date, planned completion date, actual completion date, and activity score. Responsibility for an activity can be either primary or secondary. If an agent assumes primary responsibility, the name of this agent appears in capital letters. However, if the agent assumes secondary responsibility, the name of this agent appears in lower case letters. The activity score is a subjective estimate of the relative contribution of the activity to the attainment of the objective stated in the

TABLE 1

Sample Activity Analysis Table

STATEMENT OF THE GLOBAL PROGRAM OBJECTIVE

Activity	Responsible Agents	Starting Date	Planned Completion date	Actual completion date	Activity Score
Activity 1 - description	PRIMARY Secondary	7/72	7/73	6/73	15
Activity 2 - description	PRIMARY Secondary	7/73	10/73	11/73	5
Activity 3 - description	PRIMARY Secondary	9/73	10/74		45
Activity 4 - description	PRIMARY Secondary	9/73	10/74		10
Activity 5 - description	PRIMARY Secondary	1/74	6/74		25

Total Activity Score (TS) = 100

Sum of the activity scores for the completed activities (SAC) = 20

% Completed to date for this program objective = 20%

table. This estimate is made by the program director after taking into consideration the amount of time and other program resources which must be expended in order to complete the activity. It is evident from the sample activity analysis table that:

IF

SAC = Sum of the activity scores of the completed activities
TS = Total activity score

THEN

$\frac{SAC}{TS} \times 100 =$ % completion to date for the program objective

The calculation of percent completion to date is simplified somewhat if the scores assigned to the activites in the table are based on a total activity score of one hundred (100). In such cases, percent completion to date is equal to the sum of the scores for the activities completed.

Once the activity analysis rationale has been applied to the global objectives of an ongoing program, the program staff can better communicate their intents and activities to an evaluation consultant. The resultant activity analysis tables provide the evaluation consultant with the following information regarding each global objective of the program:

1. A description of each program activity in operational terms;
2. An indication of the individual or agent responsible for each activity;
3. An indication of when each program activity has been or will be initiated;
4. An indication of when each program activity has been or will be completed.

Given this type of information, the evaluation specialist can work efficiently with program staff on the development of an improved design for the evaluation of the program. Although some time will still be spent with program staff on clarifying some of the program activities and intents conveyed through the activity analysis tables, the time spent with program staff is significantly reduced through the application of the activity analysis rationale.

In addition to facilitating the development of an improved evaluation design, the total program benefits from the application of activity analysis since the program director is forced to develop a detailed description and schedule of program activities which can be attained realistically. The format of this program description and schedule (i.e., the activity analysis tables) enables the program director to estimate at any time the progress of the program toward the attainment of its objectives.

CONCLUDING REMARKS

The activity analysis approach has been used by the author in the development of an evaluation design for several programs. The cooperation of program directors in the application of activity analysis has been quite favorable. The largest program to which activity analysis has been applied is the Holliston (Massachusetts) Middle School Project

(Title III, ESEA)*. In one month the activity analysis rationale was applied to the twenty-three major objectives of the Middle School Project. An activity analysis table for one of the objectives of this project is presented in Table 2. In this particular application of activity analysis the description of each activity related to this major program objective was placed in a narrative section following the activity analysis table, rather than in the table itself.

In addition to facilitating the development of an improved evaluation design, activity analysis provides program staff with a sense of involvement in the formulation of this design. When utilizing the traditional approach of meeting with program staff individually to clarify program activities and intents, the staff does not usually perceive their comments to be direct inputs into the formulation of an improved evaluation design. Sitting down and talking with an evaluation consultant does not tend to give one the feeling of actively participating in the evaluation design process. On the other hand, if staff are familiarized with the activity analysis rationale and asked to develop activity analysis tables, they tend to feel they are making a tangible contribution to the process of formulating an improved evaluation design. This feeling of active participation has added benefits

---

*Holliston's Middle School Project: A Systems Approach to Middle School Education. Application for Continuation Grant, November 30, 1968, Title III, ESEA Project No. 68-544.

TABLE 2

An Example of the Application of Activity Analysis to One of The Major Objectives of the Holliston Middle School Project

TO PILOT TEST, REFINE, AND EXTEND THE KNOWLEDGE CONTROL INVENTORY (KCI) WHICH HAS BEEN DEVELOPED IN PROTOTYPE FORM DURING THE PLANNING PHASE OF THE PROJECT

THE DESIGN PHASE	Responsible Agent	Starting Date	Planned completion Date	Completion Date	Activity Score
THE DESIGN ACTIVITY					
1. To Research and Develop a prototype	PROJECT[1]				
a. In Language Arts	School	2/68	6/68	6/68	15
b. In Social Studies					
2. To Pilot Test prototype in clinical summer school during planning cycle	PROJECT				
a. In Language Arts	School	7/68	8/68	8/68	15
b. In Social Studies					
3. To Pilot Test prototype in clinical summer school during teaching cycle	PROJECT				
a. In Language Arts	School	7/68	8/68	8/68	15
b. In Social Studies					
4. To Refine social studies prototype	PROJECT				
	School	9/68	4/69	4/69	15
5. To Extend KCI into each curriculum area	PROJECT				
	School				
a. Into Social Studies		9/68	4/69	4/69	6.67
b. Into Reading		9/68	4/69	4/69	6.67
c. Into Language Arts					
(1) Sentence Study		9/68	4/69	4/69	1.67
(2) Word Study		9/68	4/69		1.67
(3) Literature		3/68	1/69		1.67
(4) Composition		2/70	6/70		1.67
d. Into Mathematics		7/69	8/69	8/69	6.67
e Into Science		7/69	8/69	8/69	6.67
f. Into Unified Arts		7/69	1/70		6.67
					100.00

---------- PERCENT COMPLETE: 11/30/69=88%

1. The upper case letters indicate primary responsibility
   The lower case letters indicate secondary responsibility

since program staff tend to be more receptive to cooperating in the implementation of a design based on their contributions.

A final strength of the activity analysis rationale is that it provides a measure of the status of implementation of a program which can be reported with the program evaluation findings. Many funding agencies are concerned that the evaluation results reported by some programs are not consistent with expectations since the programs have not been implemented sufficiently. For example, a vocational education program may not have achieved its objective of increasing the occupational awareness of program participants. This outcome can be accounted for in one of two ways. Either the program was not successful in bringing about the desired change in the behavior of the program participants or the program was not implemented sufficiently to bring about the desired change in the behavior of the program participants. If the activities related to the objective of this vocational education program were organized in the format of an activity analysis table, the percent completion of activities to date would provide a measure of the degree to which the activities related to this objective were implemented. On the basis of the percent completion to date, the outcome could be attributed to the ineffectiveness of the vocational services provided or the failure of the program to sufficiently implement the services related to that objective.

In summary, activity analysis is an approach to improving the evaluation design of ongoing educational programs which

facilitates communication at several levels. Initially, it enables the program administrator and his staff to communicate the activities and intents of the program to the evaluation consultant so that a comprehensive evaluation design for the program can be developed efficiently. During the process of formulating this design, the activity analysis tables facilitate communication between the program staff and evaluation consultant. Finally, activity analysis provides a measure of the status of implementation of the program which communicates to the funding agency the degree to which the program activities related to each objective have been implemented. Increased communication in these areas through the application of activity analysis is a positive step toward improving the evaluation design, and subsequently, the overall quality of evaluation within an ongoing educational program.